



MISSOURI. Conservationist

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Conservation Conversations

Listening to citizens is critical to conserving fish, forests and wildlife. So, we hold dozens of public meetings every year and routinely survey Missourians to define their desires and expectations.

Scientific facts and the weight of public opinion are both considered as the Conservation Commission forms public policy.

In the last five years, several regulation changes were the direct result of what citizens said: telecheck harvest reporting for deer and turkey; special youth-only hunting opportunities; urban winter trout seasons; zone boundaries for waterfowl seasons; and expanded trapping options for otter.

Your Conservation Commission is composed of four committed citizens with a passion for conservation. Commissioners seek insights from others who care about Missouri's resources and they meet throughout the year in communities across the state. Some meetings include informal evening gatherings to engage local people in conversation about conservation matters important to them. Recently, West Plains was the site of such a gathering for community leaders and area citizens active in conservation work.

This occasion was like those held in Marshall, Caruthersville, Mound City, Mexico and other communities in recent years, except I knew many of the guests. Early in my career, I served as a conservation agent for West Plains, Howell and surrounding counties. Although 20 years have passed, it was good to see several old friends. Frank Martin is still publishing the *West Plains Daily Quill*; Judge Jack Garrett retired from the bench but remains active in conservation matters; and Laurel Thompson is still promoting West Plains with vigor!

It was great that Jean Davidson and Maureen Cover-Calvin could make it. Jean and Maureen, along with their deceased

husbands, Bose Davidson and Dan Cover, generously donated valuable properties to the Conservation Department for long-term management. Both serve as a warm reminder that some Missouri citizens care enough about conservation to share their hard-earned land and resources with others.



The West Plains conversations began by simply asking the group, "What's on your mind tonight?" For the next 90 minutes, the issues, ideas and questions kept my mind racing. The topics covered a wide spectrum—whitetail deer, otters, armadillos, feral hogs, the cost of hunting and fishing permits, habitat assistance for private landowners, management of conservation areas, quail habitat, invasive species, education, conservation easements and more. The variety illustrated the array of programs and services people expect the Conservation Department

to provide, and also the depth of conservation knowledge and interest among Missouri citizens.

It was satisfying to participate in the kind of grassroots, fundamental exercise envisioned when the Missouri system of conservation governance was created 70 years ago. The system is unique largely because of the constitutional authority and funding entrusted to the four Missouri Conservation Commissioners who voluntarily lead the Department and initiate many of our conversations. I'm pleased that the philosophy of citizen-led conservation is alive and our conversations are thriving today.

John Hoskins, director









OUR MISSION: *To protect and manage the fish, forest and wildlife resources of the state; to serve the public and facilitate their participation in resource management activities; and to provide opportunity for all citizens to use, enjoy and learn about fish, forest and wildlife resources.*



On the cover and left: Photographer Noppadol Paothong captured the image of a silver-haired bat (cover) and the red bat (left) for this month's feature article on *Missouri's Winter Bats*. To learn more about these winter residents, read Jeremy Kolaks and Lynn Robbins' article starting on page 14.

NextGEN

This section reports on goals established in *The Next Generation of Conservation*. To read more about this plan, visit www.missouriconservation.org/12843.

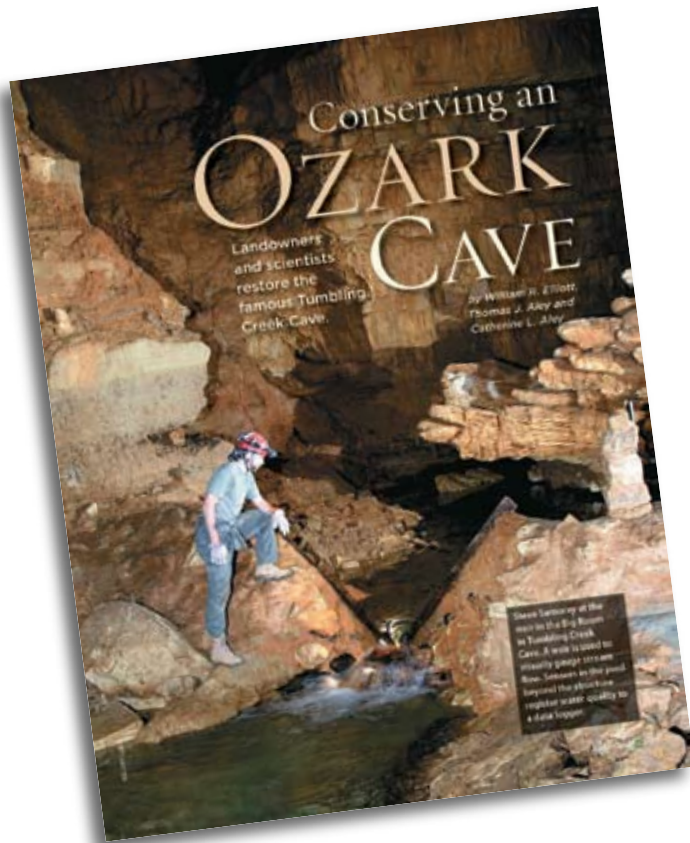
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CAVE KEEPERS

It was with great interest that my husband, Stan, and I read the Tumbling Creek Cave article [*Conserving an Ozark Cave*; October]. It only took a few seconds to realize that the author was writing about a cave that is very dear to our hearts.

Its entrance is located on property that was homesteaded by my husband's great-grandparents, Harvey and Maggie Clarkson. It then passed to their daughter Velma and her husband, Ossie Taber, my husband's paternal grandparents. My husband grew up hearing his father, Curtis, tell stories about going into what he called Bear Cave. Stan also ventured inside when he was a boy.

Because of the creek, it usually meant getting one's feet wet, and when he suggested I go with him when we were courting, I declined. However, he did take me to the entrance to show me the big hole at the bottom of the hill which leads to such natural wonder.

Ossie Taber was a progressive man, and he realized that scientists could benefit from using "his" cave for research. So he allowed geologists from the University of Missouri-Rolla to explore, map and begin the work that the Aleys and many others have continued and built upon. Later, Ossie's son, Doug, sold the property that contained the cave's entrance. But this unique

geological feature will remain a part of our family's legacy. It makes us proud to know that the old Bear Cave is teaching scientists today.

Janet E. Taber, via Internet

FISH FIX

Ken, I have a fix for muddy fish taste ["Ask the Ombudsman"; October]. Soak the fish in 1 cup apple vinegar and 2 cups water for about two hours, or until the meat bleaches white. Rinse thoroughly. It should remove the muddy taste.

Bill Sokolnik, via Internet

NONRESIDENT RULES

The comment made in "Behind the Code" [*Setting nonresident deer permit fees*; October] is right on. I grew up in Springfield and have fond memories from my youth of hunting and fishing all over the state with my dad—floating the Gasconade river, deer hunting south of Cabool in the Mark Twain National Forest, dove hunting near Carthage, trout and bass fishing in Branson, and crappie fishing on Stockton Lake.

My family all still live in Springfield, and I visit several times a year. I have not missed more than one or two deer hunts since I was about 12. I turn 38 this year! This deer season will be the third in a row I have brought my oldest son "back" to Missouri with me to experience deer hunting the way I did growing up. In a few years I will be bringing my youngest son along as well. My hope is they will be as in love with the Missouri hunt as I have always been and continue the tradition with their sons.

I am a

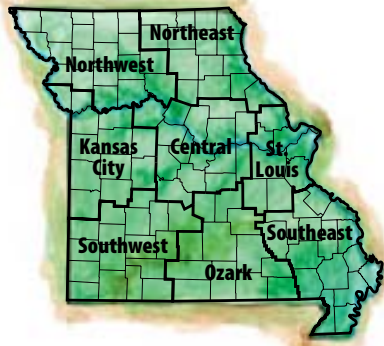
Missourian at heart! I have received the *Missouri Conservationist* ever since I moved away in 1994. It has followed me all



over central and northern Indiana and now to southwest Michigan. It keeps me up to date with Missouri conservation efforts and always gives my dad and I something to talk about.

Thank you for supporting realistic non-resident deer permit fees and explaining the reasons behind this philosophy.

David Stair, via Internet



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Reader Photo SNOW SHOOT

Rosa Pfeifle said she and her husband took advantage of the beautiful snowfall last winter to look for pictures. "It didn't bother them too much as long as I didn't get too close," Pfeifle said. "It was almost like they were posing for me." Most wild turkeys survive the winter by digging through the snow for acorns, but they will also supplement their diet by digging in crop fields for left-over morsels.

on the WEB

This month check out our featured Web pages, or go online anytime to learn more about conservation at www.missouriconservation.org.



CHRISTMAS TREE CARE

www.missouriconservation.org/9013

Picking the right tree and caring for it properly are important. These steps will provide a safer and longer lasting tree.



EAGLE DAYS

www.missouriconservation.org/4153

Missouri's winter eagle watching is spectacular, and we hope you'll take the time to view our national symbol in the wild.



SEEDLING ORDERS

www.missouriconservation.org/7294

George O. White State Forest Nursery offers Missouri residents a variety of seedlings for reforestation, as well as for wildlife food and cover.



ASK THE OMBUDSMAN

Q: Why are seedling orders from the Department of Conservation always taken in the fall with delivery for planting in late February to April? Why not take orders in July, with delivery in October or November?

A: I checked with the Department's nursery in Licking and learned that potted or balled-and-burlaped trees or seedlings do very well with fall planting, but bare-root seedlings don't. Bare-root seedlings need temperatures below 25 to 27 degrees before they go dormant. And several days of this is best to ensure dormancy. We usually don't get this kind of weather until the first or second week of November. Often at the end of October, especially if we have had very little frost, there will be a lot of green leaves on the seedlings. Lifting these trees with green leaves, before hardening off, would make seedling survival very difficult.

Another problem we have with fall lifting of seedlings, even after hard freezes, are the brown, dead leaves that are still clinging to seedlings—especially oak. When we lift seedlings that have brown leaves and bring them into our cold storage, these leaves mold and then rot, often resulting in dead seedlings. We have our best results lifting trees after January.

The Department provides seedlings to Missouri residents for a nominal fee. For details please see www.mdc.mo.gov/forest/nursery/ or request a seedling order form from your local Department office.

Ombudsman Ken Drenon will respond to your questions, suggestions or complaints concerning Department of Conservation programs. Write him at P.O. Box 180, Jefferson City, MO 65102-0180, call him at 573-522-4115, ext. 3848, or e-mail him at Ken.Drenon@mdc.mo.gov.

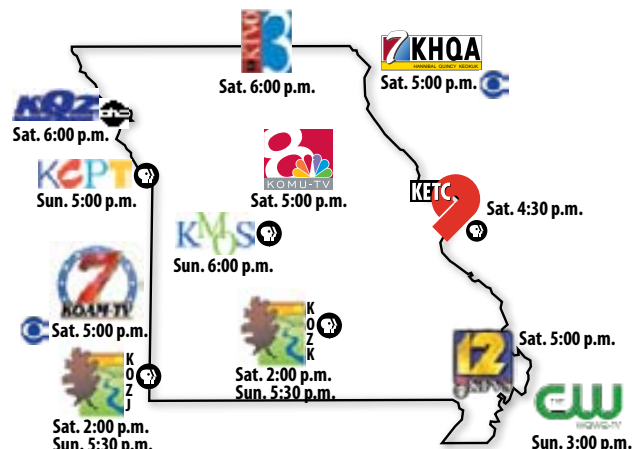
on the TV

For additional show information and video clips, be sure to visit

www.missouriconservation.org/8726.



Television the way nature intended!





Species of Concern **Badger**



Common name: Badger

Scientific names: *Taxidea taxus*

Range: Statewide

Classification: Uncommon

To learn more about endangered species: www.missouriconservation.org/8227

THE BADGER IS Missouri's largest member of the weasel family. It probably was never common in Missouri, and virtually disappeared from the state by the 1900s.

Badgers are even less common today due to the loss of prairie habitat. Badgers are seldom seen outside the northwest quarter of the state. A notable exception occurred last August, when a motorist killed a 10-pound, juvenile female badger in Jefferson City.

Badgers are sometimes mistaken for woodchucks, due to their stout bodies and their habit of burrowing. However, badgers are about twice the size of woodchucks, reaching a maximum weight of 30 pounds and a length of nearly 3 feet. White markings on the face and head further distinguish badgers from woodchucks. Unlike woodchucks, which are almost entirely vegetarian, badgers are strict carnivores, preying mainly on rodents and rabbits.

Badger fur once was used to make men's shaving brushes. Missouri trappers still legally take a few badgers each year.

Get Owls to Give a Hoot

Invite barred and great horned owls to a hootenanny.

December nights are perfect for convening a twilight hootenanny. With leaves off the trees, you can see any owls that swoop in to check out your calls. Hooting starts at dusk and diminishes by midnight. Moonlit nights are best. Barred owls say "Who cooks for you? Who cooks for you aaaaaall?" Great horned owls sound like "oot-too-hoo, hoo-hoo." They answer even poor imitations. Listen to a few calls before chiming in with your voice or a recording of the real thing.



Feed 'em Suet!

Woodpeckers love to eat this fatty treat.

To attract a wider variety of birds to your backyard feeding station, add a suet feeder or two. You will soon be seeing downy, hairy, red-bellied or red-headed woodpeckers, depending on surrounding habitat. You might even see a northern flicker or a foot-tall pileated woodpecker. Suet is fat trimmed from beef. Some grocery stores sell it in bulk, or you can buy prepared suet bricks mixed with bird seed at bird-feeding specialty stores or hardware stores. Nuthatches, chickadees and lots of other birds like suet, too. Make your own suet feeder by drilling half-inch holes in a piece of firewood and pressing suet into the holes. Hang or stand it near a window for easy viewing. To learn more about feeding birds, the Department offers a free publication. To request this item, write to MDC, *Feeding Backyard Birds*, P.O. Box 180, Jefferson City, MO 65102 or e-mail pubstaff@mdc.mo.gov.





NextGEN

Holiday Happenings

It's a natural celebration at Runge CNC.

Holiday Happenings is a December tradition at Runge Conservation Nature Center. The three-day open house has something for all ages, including guided trail walks, naturalist programs, games, crafts, live music, storytellers and relaxing in front of the fireplace while watching birds, squirrels, deer, turkeys and other animals in the wildlife viewing area. Holiday Happenings runs from 10 a.m. to 4 p.m. Dec. 27–29. Celebrate the season naturally at the nature center on Highway 179 between Highway 50 and Truman Boulevard in Jefferson City.



Catch 'em While They're Cold

Trout parks are a great escape in winter.

It's time for winter fishing at Missouri's four trout parks. The winter season allows catch-and-release fishing from 8 a.m. until 4 p.m. Friday through Monday, starting the second weekend in November and continuing through the second weekend in February. The only permits needed are a fishing permit and a statewide trout permit. The same permits allow anglers to catch

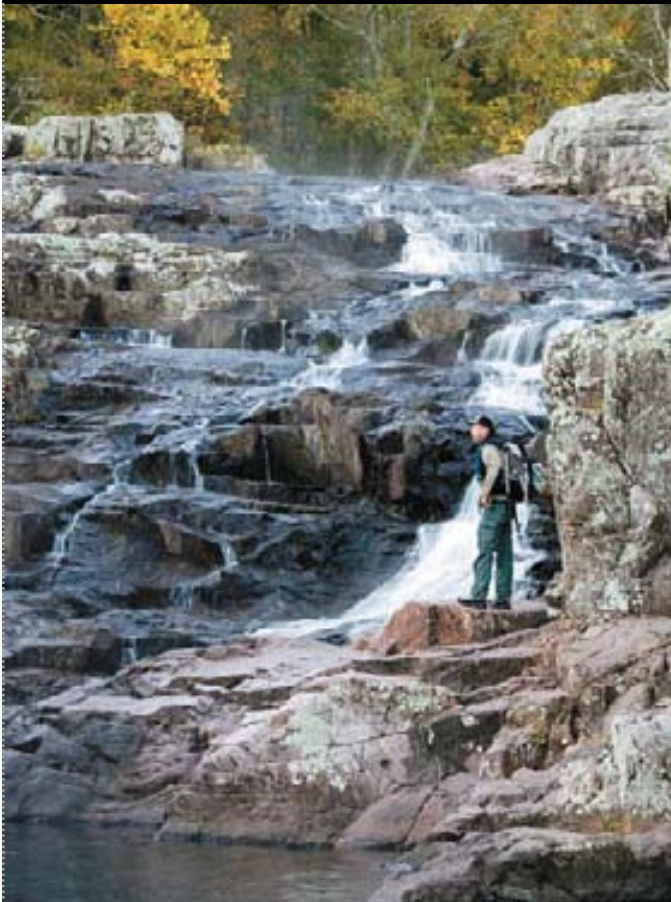
and keep trout all year in many public trout streams outside the parks.

For more information about winter fishing at trout parks, call:

- Bennett Spring Fish Hatchery, Lebanon, 417-532-4418
- Maramec Spring Fish Hatchery, St. James, 573-265-7801
- Montauk Fish Hatchery, Salem, 573-548-2585
- Roaring River Fish Hatchery, Cassville, 417-847-2430.

Information about Missouri's diverse trout fishing opportunities is found in the free *Missouri Trout Fishing*, available from MDC, *Missouri Trout Fishing*, P.O. Box 180, Jefferson City, MO 65102-0180, or by e-mailing pubstaff@mdc.mo.gov.

Trail Guide



ROCKY FALLS



ROCKY FALLS, OFF Highway NN, 9 miles southeast of Eminence, is one of Missouri's most scenic spots and a great place to stretch your legs and waken your senses on a winter day.

Stunning views of water cascading 40 feet over pink and purple porphyry (a type of igneous rock) are accessible by car. For a more challenging outing, you can reach the falls via the Current River Section of the Ozark Trail. Picnicking, day hiking and nature viewing all are available within sight of the falls. The area's stark beauty makes it a favorite haunt of nature photographers. Rocky Falls belongs to the National Park Service. It is part of Stegall Mountain Natural Area, which boasts igneous glades and forests. These are some of the oldest landforms on earth. Facilities include a parking lot and picnic area with barbecue grates. For information about the Ozark Trail, call 573-786-2065 or visit www.ozarktrail.com/currentriver.htm.

Trail: Access to more than 300 miles of the Ozark Trail

Unique features: 40-foot cascade

Contact by Phone: 573-323-4236

For more information: www.nps.gov/ozar/planyourvisit/maps.htm

TROUT PARKS: CLIFF WHITE; TRAIL GUIDE: DAVID STONNER



TAKING ACTION

Stockton Lake Outdoor Skills Campout



Group featured: Missouri Department of Conservation in cooperation with the Joplin Association of the Blind and the U.S. Army Corps of Engineers.

Group mission: To provide conservation programs to a group that represents diversity, and create opportunities for families to learn about the outdoors.

Group location: Missouri Department of Conservation Southwest Regional Office in Springfield.

“IF YOU WANT to learn an outdoor skill, we’ll make it happen,” could be the motto of the Department of Conservation’s Southwest Regional staff. Using ingenuity and hard work, they created the Stockton Lake Outdoor Skills Campout, a workshop to introduce visually impaired youngsters to outdoor recreational activities.

The overnight outing included lessons in archery, fishing, pellet gun shooting and Dutch oven cooking. Agent Randy Doman, who helped conduct the event, said it just takes a few adjustments in your training techniques and equipment to make outdoor skills training easy and fun for a person with a disability.

“We did simple things, like using balloons as targets during the archery lesson,” said Doman. “The kids knew they hit the mark when a balloon popped. Folks with special needs shouldn’t avoid outdoor recreation. Contact us. We’ll create a program that works.”

PHOTO: COURTESY OF RANDY DOMAN; ART: MARK RATHIEL

Partnership Grants

Rural fire department grants aid Missouri communities.

Volunteer Fire Assistance grants are helping to improve fire protection services in rural Missouri. Grants of \$500 to \$3,000 in matching funds from the Department of Conservation and the U.S. Forest Service help fire departments purchase firefighting and personal protective equipment. VFA grants are available to fire departments in communities with populations of 10,000 or less. For more information on VFA grant eligibility requirements or to obtain a grant application, fire chiefs should call 573-468-3335, ext. 225, by Dec. 31.



Grazing Conference

Managing grasslands for money and the environment.

Farmers, conservationists and others interested in protecting the nation’s grasslands should sign up now for the Heart of America & Mid Missouri Grazing Conference Jan. 7–8 at the Holiday Inn Select in Columbia. The conference is designed to help landowners manage grasslands in ways that are economical and environmentally friendly. A fence and water demonstration and sessions on grazing for ecological and economic stability and nitrogen fertilizer alternatives are among the conference offerings.

Forage management is vital for providing reliable sources of feed for livestock, food and shelter for wildlife and protecting water quality.



Conference registration forms can be downloaded from the Missouri Forage & Grassland Council Grazing Lands Conservation Initiative Web site at agebb.missouri.edu/mfgc.



NextGEN

Rabbit Hunting

Fast-moving small game makes for exciting hunts.

Hardy outdoors persons looking to shake the winter blues can enjoy hunting for cottontail and swamp rabbits through Feb. 15. The daily limit of six rabbits may include only two swamp rabbits. The possession limit of 12 may include only four swamp rabbits. Jackrabbits are protected and may not be hunted or trapped.

A fairly stable population and the challenge of pursuing fast-moving targets in winter conditions keeps rabbits among Missouri's most popular game animals. During the 2006–2007 season, approximately 62,000 hunters participated in the sport, harvesting 432,109 rabbits.

Winter can be the best time to test rabbit-hunting skills. The immature rabbits likely have been taken by hunters or predators, leaving behind rabbits that have experience evading capture. Late-winter rabbits prefer to stay in the safety and warmth of thick cover, so it takes a lot of work to draw them out into the open.

Always keep safety in mind during and after your rabbit hunt. While afield, wear a fluorescent orange vest and cap so you are visible to other hunters. When preparing your quarry for the table, make sure the rabbits are thoroughly cooked.



Waterfowl Hunting

Scout it Out



Name: Ten Mile Pond Conservation Area

Location: Mississippi County, east of East Prairie on Highway 80, then five miles south on Highway 102.

For more info: www.missouriconservation.org/a8241



TEN MILE POND Conservation Area is a premier duck hunting spot in the Department of Conservation's South Waterfowl Zone. Its 1,200 acres of wetland habitat serve as the winter home to a variety of waterfowl species, the most popular of which are mallards and black ducks. Competition is very stiff for the limited number of hunting units available.

Hunting units are allocated through a daily drawing.

Hunters should brush up on area regulations well in advance of a trip to Ten Mile Pond. A valid daily tag, issued at area headquarters, is needed to hunt waterfowl on the CA. Decoys and portable blinds are permitted but must be removed from the area daily. Waterfowl may be taken only from an assigned hunting unit. Hunters must check out from the area immediately after their hunting trip. Contact the area headquarters at 573-290-5730 for other special regulations.

Ten Mile Pond also is a good place to enjoy a day of birdwatching. The CA is major stop for migrating shore birds, and bald eagles are common on the area throughout the winter.

PHOTOS: CLIFF WHITE



Decorating With Plants

Creative ways to bring nature inside your home

Pruning shears, a glue gun, a trip outside to gather plants and your imagination are all you need to give your holiday decorations a natural flair.

The wide variety of plants found outside can be used to make beautiful and unique wreaths. Scour woodlots for grapevines hanging from trees. Be careful to avoid the vines that cling close to the tree trunks, as those might be poison ivy. Look for vines that hang free of tree trunks. After you gather the vines, soak them in water to make them more flexible. When they are ready, roll the vines up in a circle. To hold the vines together, make a few spiral wraps around the outside of the circle and tuck the ends inside. Let the wreath dry overnight before adding decorations.

Dressing up the wreath is the most creative part of decorating naturally. Add vivid color to your wreath with holly berries, bittersweet and wild wahoo. Dried seed pods and winter weeds can be used naturally or spray painted to make festive decorations.



Christmas Bird Count

A great way to get involved with conservation

Add a little birdsong to your holiday celebrations by participating in the Christmas Bird Count. The census of bird populations is the largest and oldest citizen science event in the world. It began in 1900 to get people to participate in bird conservation. Counters in communities across the nation select one day between Dec. 14 and Jan. 5 to document all the birds they see in their 5-mile radius counting circles. The CBC helps monitor the status and distribution of bird populations throughout the western hemisphere. Visit www.mobirds.org/CBC/CBCSchedule.asp to sign up for the CBC in your area.

FEATHERED FASCINATION

Bird Brains

THE NEXT TIME someone calls you a bird brain, take it as a compliment. Research into bird intelligence has found that it is a misconception that birds are incapable of learning and reasoning.

The Cornell Lab of Ornithology's *Handbook of Bird Biology* cites several examples of birds learning through habituation and trial and error. Birds feeding along roadsides that stop reacting to passing vehicles display learning through habituation. The animals discovered that the passing cars pose no threat and provide no rewards, so they ignore the vehicles. Trial and error learning, or adopting actions based on whether an experience yields a reward or punishment, can be observed in fledging birds. In a search for food, a fledgling moves about pecking at objects. In the beginning it pecks virtually everything it encounters, eventually it finds an insect and eats it. The bird then pecks more selectively, associating a food reward with a certain class of objects.

Research has found birds learn in many other ways. Newly hatched birds learn by imprinting or following the actions of the first moving object they encounter. Some studies indicate that some birds might be capable of insight learning, or the ability to modify behavior without previous experience with a particular problem.



Cardinal



Don't Spread Zebra Mussels

These invasive aquatic animals cause harm to Missouri's rivers, lakes and streams

Biologists made an unpleasant discovery in October when they found zebra mussels in the Osage River just downstream from Bagnell Dam. The zebra mussel (*Dreissena polymorpha*) is native to Eurasia. It entered North America in the ballast tanks of seagoing ships in the 1980s. It has been highly destructive in some waters, displacing native animals, clogging industrial and municipal water intakes and causing millions of dollars of damage to boats, docks and other property.

Zebra mussels spread by hitching rides on boats, trailers and other marine equipment. Missourians can help avoid causing further spread of zebra mussels by taking the following precautions:

- Inspect every part of boats, trailers, and other equipment that have been in the water before moving them to a new location. Be sure to closely inspect nooks and crannies around intake screens, trim plates, etc.
- Remove suspected zebra mussels, along with vegetation or other material clinging to boats and trailers, and deposit in a trash container.

• Report suspected zebra mussels to the Conservation Department.

• Rinse boat bilges, trailers, motor drive units and live wells. Use water at least 104 degrees if live zebra mussels are found, or if your craft has been in waters known to be infested with zebra mussels. Most commercial car washes meet this standard.

• After rinsing, allow boats and other equipment to dry in the sun for at least five days before relaunching.

To learn how to identify zebra mussels, write to MDC, *Zebra Mussel Watch Card* and *Zebra Mussel: Missouri's Most Unwanted*, P.O. Box 180, Jefferson City, MO 65102, or e-mail pubstaff@mdc.mo.gov.



Stream Team



Tim Smith & Friends



TIM SMITH SORT of backed into starting a Stream Team. He became a volunteer water-quality monitor in 1993 when he was the storm-water engineer for the Greene County Planning and Zoning Commission. Stream Team officials recently noticed that he had never registered as a Stream Team, so they signed him up. Smith, who now is Greene County's resource management administrator, said most of his coworkers have helped him conduct water testing at one time or another. "It was a useful thing," he said. "We have used it as a training opportunity for our staff over the years. It's kinda fun getting everybody out there estimating stream flow and showing them the critters." Beyond that, he said the information he has gathered in 14 years of monitoring Clear Creek has practical value. "We have quarterly records. In another 50 years, we won't have to guess what has gone on in the creek."

Stream Team Number: 3398

Date formed: July 10, 2007

Location: Springfield

For more info about Stream Teams: www.mostreamteam.org



Our Glorious Forests

ANGELINE CA



Size: 39,245 acres
Location: Shannon County
Highlights: Rugged forest and old fields with a hiking trail and 25 miles of field roads open to horseback riders. It also offers access to the Jacks Fork and Current rivers.
Find more info: Call 573-226-3616 or visit www.missouriconservation.org/a9512



THE SCENT OF holiday greenery brings to mind Missouri's only native pine—the shortleaf. Although this tall, sparsely limbed conifer isn't Christmas-tree material, it fueled Missouri's lumber boom. As a result, only 500,000 of the state's original 6.1 million acres remain. When the last large tracts fell in the 1940s, pine-dependent birds such as the brown-headed nuthatch, Bachman's sparrow and the red-cockaded woodpecker retreated to shortleaf pine forests in other states. To restore some of our pine forests' former glory, the Department is using selective harvest and prescribed fire, especially on conservation areas such as the Angeline. Eventually, the Angeline's original oak/pine community will show greater species diversity from ground to canopy. Given enough time and space, restoration efforts could produce a kind of conservation miracle—the return of the brown-headed nuthatch, Bachman's sparrow and the red-cockaded woodpecker. That's a gift future Missourians will celebrate, regardless of the season.

Beauty of Clearcuts

New growth warms upland wildlife with winter cover.

Although it takes several years for the beauty of clearcutting to appear to most humans, it becomes apparent to upland birds as soon as the mercury dips. Quail and other upland wildlife find warm winter cover in recently clearcut forests. Ugly to most people, especially in the short term, clearcutting can play a useful role in sustainable forest management. It removes the canopy, providing sunlight to young seedlings struggling to grow. Find more info on sustainable forest management at www.missouriconservation.org/3497.



We All Live in a Forest

Make your Christmas tree last the whole season.

You can keep a Christmas tree fresh for a month, no problem," said former Department of Conservation forester Clell Solomon, who grows and sells Christmas trees in Armstrong. His advice for choosing and caring for your tree is simple—make sure it's fresh, choose the right size for your space and keep it moist in a water-holding stand. Whether you want a Scotch pine or a spruce, test the needles for freshness. If they fall like rain when you shake the tree, it's dry. Clell warns against "doctoring" stand water with aspirin or commercial treatments. "The best thing for your Christmas tree is plain water," he says. Thanksgiving weekend is a popular time to shop for Christmas trees. To find a Missouri grower near you, search www.christmas-tree.com/real/mo/.



PHOTO: JIM RATHER; ART: MARK RAITHEL



NextGEN

Help for Landowners

Call your PLC for a free habitat consultation.

If you want better wildlife habitat on your rural property, give your local private land conservationist (PLC) a call. Trained in a wide range of habitat-development approaches, Conservation Department PLCs offer aid in pond management, stream improvement techniques, native-plant restoration and wildlife-friendly agricultural methods.



PLCs can also help you find state and federal cost-share programs that can help you finance new management practices.

Visit www.missouriconservation.org/14140 and click on your county to find your local PLC.

Contractor Workshops

Web site has upcoming dates and locations.

If you're in the contracting business, you might want to add habitat management to your services. State and federal cost-share programs have created the need for contractors who can implement conservation management plans—yet few are qualified to do the work.

To help bridge the gap between lack of know-how and opportunity, the Department has joined the Missouri Agri-Business Association to offer Conservation Contractor Training workshops in 2008. Workshop topics include forest management, prescribed burning, native grass establishment and an



overview of state and federal conservation programs. Most sessions will have both classroom and outdoor field exercises. The dates

and locations for the spring workshops are not yet finalized, but they will be posted at www.missouriconservation.org/15805.

Study Proves CP33 Pays

On the Ground



SHRUBBY, MIXED-GRASS buffers help quail and other wildlife—but does this CP33 treatment help the farmer's bottom line? According to a recent study, the answer is yes.

The University of Missouri Food and Agricultural Policy Research Institute (FAPRI) found that CP33 of the Conservation Reserve Program returned 25 cents to \$2.49 per acre per year. FAPRI cautions that these findings do not represent all farms, but apply most where tree growth along field edges reduces crop yields. In these situations, whether corn is bringing \$2 or \$4 per bushel, CP33 pays.

Holt County farmer Karl Noellsch agrees. "What looked good to me was not having to farm these highly erodible acres," he said. "It's usually poorer soil, and you've got trees hanging out over it. We don't make much money off those places."

Want to know if you qualify for CP33? Contact your local private land conservationist via www.missouriconservation.org/14140, or call your regional Conservation Department office (see page 3 for phone numbers).

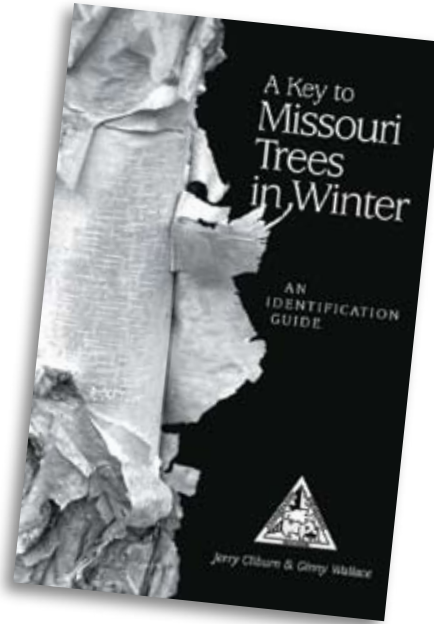
PHOTO: DAVID STONNER; ART: MARK RAITHEL



Identify Trees in Winter

Book helps you “read” bark and twigs.

If you can't tell one deciduous tree from another after they shed their leaves, you might be surprised to learn that a tree's bark and twigs are reliable identification characteristics any time of the year. *A Key to Missouri Trees in Winter* shows you how to interpret them. This classic dichotomous key uses a series of couplets or alternative choices to guide you through the field identification of 123 trees and shrubs native to Missouri. Simple black and white ink sketches accompany each species name, helping you confirm your identification. At 46 pages, this lightweight guide is easy to carry afield. You can find *A Key to Missouri Trees in Winter* at Department nature center Nature Shops and online. To order, call toll free 877-521-8632 or visit www.mdcnatureshop.com. The price is just \$3 each, plus shipping, handling and sales tax, where applicable.



Become a Master Naturalist

Local chapters offer training opportunities statewide.

Turn your passion for nature into mastery that can make a difference. Become a master naturalist. Co-sponsored by the Missouri Department of Conservation and University of Missouri Extension, the Master Naturalist™ program helps you become a well-informed community leader dedicated to improving natural resources. Local chapters will offer training at various times throughout the year. Training in Cole Camp, Columbia, Joplin and West Plains starts in February. To receive training notices, e-mail master_naturalist@mdc.mo.gov. Visit www.missouriconservation.org/9295 for more information.

NATURE ACTIVITY



PHOTO: NOPPADOL PAOTHONG

Springfield Nature Center Eagle Days



EVERY WINTER THE Springfield Conservation Nature Center and nearby Lake Springfield celebrate the return of wintering bald eagles with their annual Eagle Days event. Great for families, this year's program

includes both indoor and outdoor activities. Inside the nature center, Phoenix, a live bald eagle from Dickerson Park Zoo, will thrill visitors with demonstrations every hour on the hour both Saturday and Sunday. Outdoors, visitors can view wild eagles and waterfowl feeding on the lake until 4 p.m. Staff and volunteers will have spotting scopes set up at various locations around the lake. Stop by the nature center for driving directions to scope stations. No registration for the two-day event is required. To view nature activities happening around the state, visit www.missouriconservation.org/4163.

Program: Eagle Days, Jan. 19, 9 a.m. to 3 p.m. and Jan. 20, 11 a.m. to 3 p.m.

Features: Inside the nature center: hourly live eagle programs. Around Lake Springfield: spotting scopes for viewing wild eagles until 4 p.m.

For more information: Visit www.missouriconservation.org/4153 or call 417-888-4327



Lynn W. Robbins, a professor with the Missouri State University Biology Department, observes a bat caught with a mist net.



MISSOURI'S
WINTER
Researchers learn that it's OK
to think outside the cave.
BATS

*by Jeremy Kolaks and Lynn Robbins
photos by Noppadol Paothong*



Red bat



Silver-haired bat

Missouri is known for its thousands of natural caves. Many of these caves are famous for their vast numbers of hibernating bats, including the endangered Indiana and gray bats.

Until recently, we believed that three species of bats usually not associated with caves spend their summers in Missouri but travel south to more favorable climates when the days get short and the nights cold.

Research, however, has shown that Eastern red bats (*Lasiurus borealis*), evening bats (*Nycticeius humeralis*) and silver-haired bats (*Lasiurus noctivagans*) remain throughout the winter, having adapted to withstand the rigors of snow, ice and occasional prescribed fires or wildfires.

Red bats are by far the most common of the three species. They can be seen flying on warm winter evenings and nights as they forage over forest openings and urban parks, often taking advantage of insects attracted to lights when the temperature gets above 50 degrees.

Red bats are common throughout North America. They range from the Rocky Mountains eastward and from Canada to Mexico during summer months. During those months they roost in the foliage at the tops of deciduous trees, seldom, if ever, roosting in tree cavities or caves.

Research conducted by the Missouri State University biology department at Taney County's Drury/Mincy Conservation Area and Carter County's Peck Ranch Conservation Area indicate that these bats exhibit unique behaviors to cope with Missouri's winters.

In 2003, when research first began, a red bat was captured on a warm late-winter evening. We fitted the bat with a radio transmitter, but soon after release the temperature dropped to below freezing. The next day remained very cold, and when we tracked the red bat we found it deep in torpor (a light hibernation) on the ground, nestled under the leaf litter. Since that time more than 50 red bats have been tracked to leaf litter roosts on cold winter nights.

Evening bats, found in the eastern United States and northern Mexico, also forage for insects over forest openings. They are known to roost in tree cavities and occasionally in buildings, but only rarely in caves.

The silver-haired bat can be found in every state including Alaska. It has been found most



Evening bat



Because of the rugged terrain and long distance some bats can travel, aircraft are often used to track bats using telemetry.

commonly roosting on or under the bark of trees, but also in tree cavities, open sheds or outbuildings and the occasional rock crevice.

Evening and silver-haired bats can also be seen in the winter, though there are fewer of them, and they can be hard to distinguish from red bats while flying at twilight. Instead of roosting under the leaf litter when winter nights get cold, both species stay above the leaves.

Studies show that evening bats use more living trees in the winter than summer, and that the height of surrounding trees are lower. They have never been found using the same trees during both seasons. These bats will leave their tree roosts during warm winter evenings to drink; however, there was no indication they feed during these brief excursions.

During the warmer months of the year, silver-haired bats commonly roost on or under the bark of evergreen trees. In winter, however, they roost only in large deciduous trees with obvious cavities or crevasses that provide them protection from precipitation and cold temperatures. Although they are not as active at low temperatures as red bats, they do feed during winter.

The differences between summer and winter roosts of red bats are dramatic. During summer, red bats are found almost exclusively in shady areas at the top of the deciduous forest canopy. After leaves fall, however, they are found roosting in dead oak leaves lower in the trees, choosing locations on southern-facing slopes with maximum exposure to the sun and minimum exposure to cold north winds.

As temperatures approach freezing, they leave their leafy roosts and fly to the ground where they crawl under the leaf litter. Once again, they choose southern-facing slopes with exposure to the sun.

Red bats might leave their tree or leaf litter roosts if the afternoon temperatures rise above 45 or 50 degrees, and they might continue foraging during the first hour of darkness, even if temperatures fall to 40 degrees. This species feeds regularly during this time but only rarely is observed to drink. If the temperature stays above freezing, these bats will spend the night hidden in hanging dead leaves, but if it gets below freezing, once again they will find a spot under a protective covering of leaves on the forest floor.

It is this strange but normally successful

strategy to cope with falling temperatures that led us to consider the impacts of using prescribed late winter or early spring burns in forest management.

Forest and wildlife managers have noticed bats flying out from under the leaf litter in front of prescribed fires and wildfires for many years prior to this study. However, over the past two years firefighters and biologists alike have been paying special attention while conducting fire activities. Since that time, there have been multiple confirmed sightings of bats flying out of the leaf litter ahead of, and even behind, fires. Interestingly enough, red bats appear to prefer areas that are under prescribed fire management over areas that are not.

This is not to say the fire doesn't have a negative impact on bat populations. Further research is needed to quantify the direct effects of fire. It is possible that short-term negative impacts could pay future dividends in terms of the amount and quality of habitat available to Missouri's winter bat species.

If you see bats flying, hanging in dead leaves, or under or emerging from leaf litter from November to March, please go to biology.missouristate.edu and click on "Missouri Bats," which contains links to a survey that will help us gather more information about our winter bats. ▲

BATS ON THE FLY

Some bat studies can be performed in the laboratory, but most research has to be carried out in the field.

We capture bats in fine-mesh nylon nets placed over gravel service roads or ponds. Each bat captured is assessed, weighed, measured, outfitted with either a radio transmitter or numbered band, and then released. Recaptured banded bats help provide population estimates. Bats outfitted with transmitters help biologists study their habitat requirements.

We use telemetry (below) to home in on bats equipped with radio transmitters. Considering that red bats, for example, might travel more than 10 miles in one night over various terrains and multiple properties to get from their roost to sites where they feed, you can imagine the difficulty we would have tracking bats on foot or with a vehicle.

Fortunately, the Conservation Department has aircraft available to aid us in our research. The use of aircraft significantly reduces the number of man-hours required to complete our work and helps ensure that information can be gathered in a timely manner.

The Department's helicopter is outfitted with a radio receiver that can locate animals that travel too far to be tracked any other way. Currently, and in the past, Department aircraft have been used in studies on deer, turkey, ducks, doves, otters and even catfish. Without this resource we would not be able to manage Missouri's fish, forest and wildlife as efficiently and effectively as we do.





Old Job, NEW WORLD

The fur industry continues to be a source of profit, recreation and furbearer management for Missouri trappers and traders in the 21st century.

Story by Christine Tew, Photos by Noppadol Paothong

The pages of most American history texts hold stories of trade between American Indians and European settlers. Trinkets and furs were the common currency of a rapidly evolving culture. In time, the use of coins and bills replaced this system, but fur trading retained a small population of trappers and buyers through centuries of modernization, continuing to fill urban need with a rural product.

Early trappers handled every aspect of fur trading, from capturing the wild animal to selling the finished pelt. The path of a pelt has grown more complex with each generation of traders. Furs are now likely to pass through the hands of a trapper, fur house, buyer and broker before reaching consumers.

STATE AND FAMILY TRADITIONS

Fur trading in Missouri can be traced back to the earliest settlers. Donald Veirs of Unionville follows his ancestry back to French fur traders that settled near the Brunswick area in 1754. Veirs is an 11th generation fur trader with more than 45 years of experience.

The weathered wooden sign above his fur house in Unionville is simple. A hand-painted raccoon on the left and a fox on the right guard the phone number stenciled across the center of a board once painted white. The low-slung building attracts little attention, even on a corner in residential Unionville. Driving up to the building in a red Ford flatbed, Veirs straightens his cap, which advertises a local veterinary clinic, before unlocking the front door.

Fur trading is the family business. “We traded trinkets with Native Americans for furs,” said Veirs’ sister, Charlotte Cox. “Every generation has bought furs.” Veirs’ son Mark is a buyer in Fairfield, Iowa, and sells to the house in Unionville. Another son, Danny, bought furs in Missouri for eight years before moving to Nashville, Tenn. Veirs’ father bought furs for 76 years in Fayette.

As a child, Veirs scraped raccoon hides for spending money. He earned 10 cents for each cleaned hide in 1940. Joining the family business might be a difficult decision for some people, but Veirs did not hesitate. “My ancestors bought furs, back to the French fur traders,” he said. “My dad started out buying furs on horseback when he was 12.”



Donald Viers lays out furs in his Unionville shop with his son Mark, who is a fur buyer in Iowa.

At 16, Veirs established his first trade route, driving from the family home in Fayette to Versailles. "I had a 1952 Plymouth with the backseat out," he said. "I'd go around to people's houses." After years of selling to the family house in Fayette, Veirs began construction on his own fur house in Unionville in 1966.

Business has changed quite a bit in the past 50 years. In 1954, Veirs piled pelts into his Plymouth to sell to his father. Opossum hides were worth about 10 cents, and raccoons only 50 cents, he said. "Muskrats were worth about 60 or 70 cents." Veirs now invests \$1 in an opossum pelt, \$7 to \$8 in a raccoon and \$4 to \$5 for a muskrat pelt.

After nearly 50 years trading furs, Veirs has considerably more than an old car invested. "There are a lot more dollars involved today," he said. "I spend \$100,000 before I sell anything, just for processing." The raccoon hides he scraped for 10 cents in the 1940s now cost a dollar or more for cleaning. "I've got about \$700,000 tied up in furs," he said. However, his investment isn't the only change. "One of the biggest differences in the industry today is the difference between really high-quality pieces and the lower-grade furs," he said.

While the stakes have grown higher for Veirs financially, he is reaping the benefits of his place in Unionville. "My dad, he always lived at his fur house. They'd work until midnight," he said. "I've told my help to come in at 7 a.m., and we will all be out by 5 p.m." Veirs hires young men from nearby Amish communities to work with furs during peak times. Other youth aren't interested in that dirty, greasy work, he said. "If it weren't for the Amish, I'd be out of business."

Veirs even chose to test his marriage with a few furs. After the wedding in Springfield, the couple spent their first night in Branson. Then the honeymoon plans changed dramatically. "We went over to Poplar Bluff and bought a few furs," he said. "We put those in the trunk of the car, and, yes, there were some skunks involved."

His wife, Mary Lou, a retired speech therapist, now grows flowers within arm's reach of the fur house and goes with him on the trade routes. "I just wouldn't have time to buy the furs without her," he said. "She keeps up the record books while I handle the furs." Veirs has expanded his trade route far beyond the initial drive between Fayette and Versailles. He now covers ground from Albany west to St. Joseph and south to Arkansas.

TRAPPING AS A TOOL

Trapping is more than an enjoyable and profitable outdoor activity—it is also an important wildlife management tool.

Trapping in Missouri is carefully regulated by the Department of Conservation. Regulations are established by considering population levels, harvest pressure and market demands. Wildlife laws only allow people to trap mammals that are common or abundant, which helps attain desired furbearer population levels.

If you are interested in learning more about trapping for fun, profit, management or to remove nuisance animals from your property, contact your local conservation office (find regional phone numbers on page 3), visit the Department's trapping page at www.missouriconservation.org/7616, or check out our Calendar of Events at www.missouriconservation.org/4163 for upcoming training and educational activities.

A CHANGING BUSINESS

The entire fur industry continues to change as well. Trapping is losing ground to ranches that raise some furbearers in captivity. "The wild fur business is such a small part," Veirs said. "Nine hundred out of 1,000 mink coats are made from ranch-raised minks."

As a Missouri fur dealer, Veirs can buy, sell, possess, process, transport and ship pelts and carcasses of furbearers throughout the year, according to *The Wildlife Code*. "Fur dealers and buyers were required to purchase permits clear back in 1936 when the Department of Conservation came into existence," said Dave Hamilton, a Department resource scientist.

The merchants and consumers that hand-selected their furs are also dwindling. "Dad and Granddad, most of their fur trading was done out of garages and homes," Veirs said. "Grandpa never sold anything in the big markets." Veirs sends all of his furs through a broker and an auction house. "I'd rather go through a broker," he said. "The companies have confidence in the broker and the brokers know what they are looking for in the pelts."

The inconspicuous building in Unionville is a stopping point for thousands of pelts each year. Veirs limits deer hides to one tractor-trailer load, usually buying 3,500 to 4,000 for \$5 each. Deer hides are often used for shoes and gloves according to Veirs. As many as 35,000 of the more desirable raccoon pelts pass through the house before reaching destinations in Russia, China and the Middle East.

Those large numbers do little to offset the long hours and low pay Veirs associates with fur trading. "Back in the late 1970s and early 1980s, the fur business supported the farm. Now it is the other way around," he said. "About one out of every three years we make money."

The Department of Conservation issued 95 permits to Missouri fur traders in 1970, according to Hamilton. "The fur traders increased with the increasing fur values during the 1970s and 1980s when over 300 traders were involved." Those numbers reflect the fluctuations that plague the fur industry. "We issued a high of 2,220 [permits] in 1938," Hamilton said. However, in the late 1940s and 1950s fewer than 200 permits were issued per year.

The Missouri fur industry dipped much lower than any of those numbers in the last decade. "Today, we have only 23 fur dealers and 23 fur buyers, a total of 38 individual companies," Hamilton said. However, the financial impact remains large. In the 1980s the fur value reached a high of \$9 million for just the Missouri harvest.

Veirs also maintains a 150-head crossbred cow-calf operation outside Unionville and bales hay during the summer season. His father and grandfather cut timber to round out the family finances during their years in the fur business. "I couldn't buy fur if I didn't do something else," Veirs said.

While Veirs has no intention of giving up his fur trading or cattle, he admits to letting a bit of relaxation slip into his routine. He now spends a little more time supervising hired help and at home with his wife. Veirs hopes his family will stay in the fur industry, but due to the unpredictable nature of the business, he leaves that decision to his sons. ▲



Stretched raccoon furs hang to dry in the drying room.

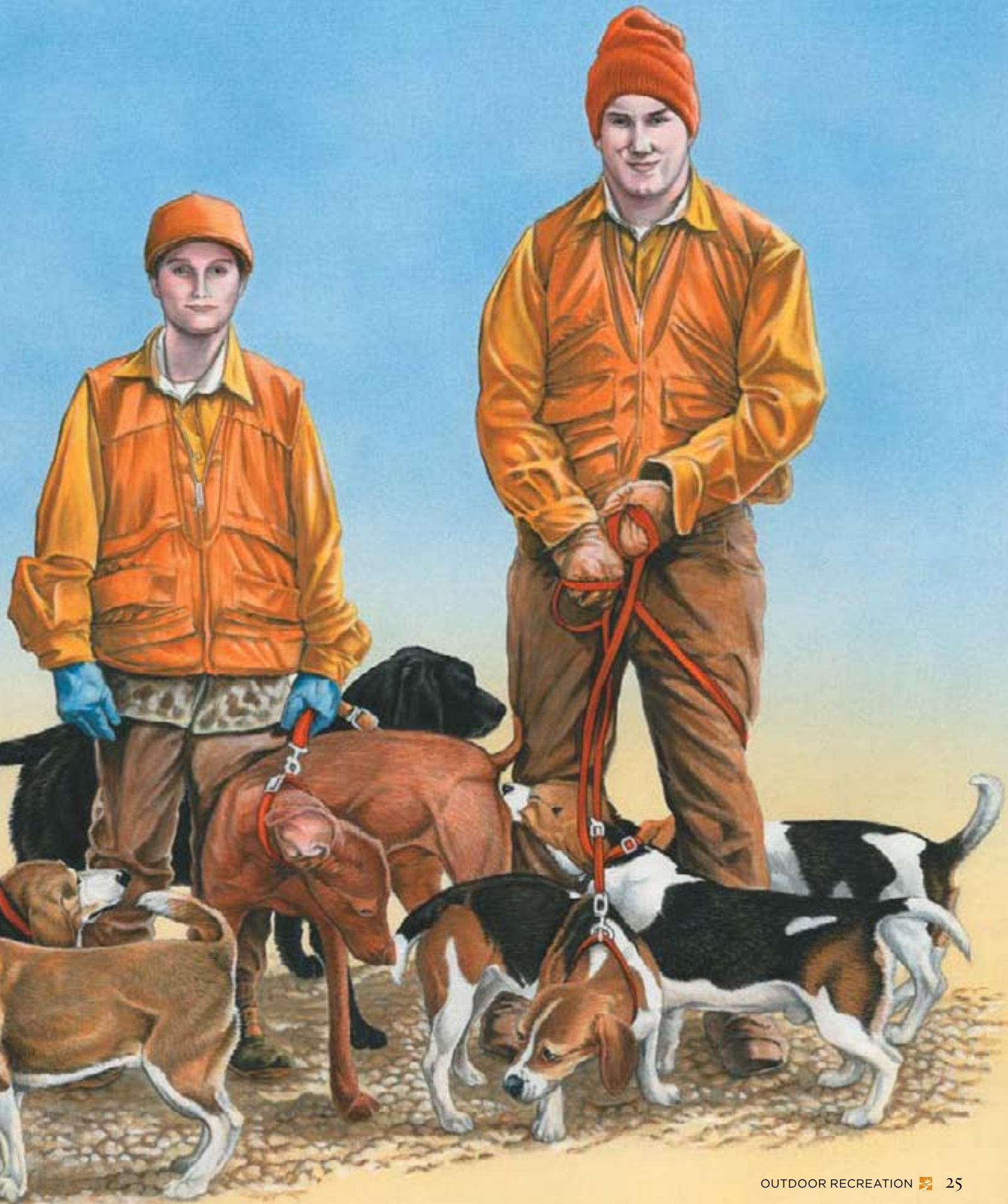
An illustration of a man standing in the center, wearing a bright orange knit beanie, a quilted orange and yellow jacket, blue pants, and brown boots. He is holding red leashes for three beagles. The background is a clear blue sky above a light-colored ground. The title 'My Three Sons' is overlaid on the left side of the image.

My THREE Sons

Bringing three new
hunters online with
good gear: Priceless!

Story by David Urich • Illustrations by David Besenger

TDAMID BESENGER



I pulled into the parking lot at the Lamine River Conservation Area in Cooper County on a Saturday morning in mid-January. My three sons—ages 9 to 14—were with me. In the trailer behind the truck were eight dogs: six beagles, a Labrador and a vizsla.

We were all going rabbit hunting.

The dogs knew it and were announcing their eagerness by barking their heads off. The weather was perfect for rabbit hunting with dogs. The temperature was in the high 30s, it was misting rain and there was no wind. The dogs would have no trouble trailing rabbits. From the noise they were making in the trailer, I suspected they knew we were in for a good hunt.

A few minutes after we let the dogs out, they were chasing the first rabbit. My sons knew what to do because they had been rabbit hunting with me for years. We spread out and walked slowly behind the dogs. The secret to success was anticipating where the rabbit would run and getting in position to make a shot. My sons knew that watching the dogs was the wrong thing to do because the rabbit is usually way ahead and will run right by a hunter who is too intent on the dogs.

Although they would rather be running with the other dogs, I made the Labrador and vizsla sit next to me while the beagles were chasing rabbits. I knew that the two bigger dogs were much better than me at sensing a rabbit creeping through the grass and brush. When their ears went up, I knew the rabbit was close.

As the morning progressed, the mist turned to rain. The rabbit hunting continued to be excellent, and I knew that there was a very good chance we would each get a limit despite the weather. I was absorbed in the hunt. My boys didn't need much direction. They knew what to do.

The dogs were working a particularly sneaky rabbit, and I was thinking of where I needed to move when I felt a tap on my shoulder. This broke my train of thought. Who would disturb me at such a critical time?

I turned around and there was my oldest son with his two brothers standing behind him. Evidently he was chosen as the spokesperson. He said, "Dad, I think we've had all the fun we can stand for today."

They wanted to go home. What a disappointment. We were on the verge of a limit for all four of us.

I looked more closely at my sons. I don't know why I hadn't noticed it before but they looked like they had just swum across the Missouri River. They were wet to the bone, especially their feet.

They were miserable, and even an active, robust rabbit hunt with plenty of shooting was not enough excitement to overcome the cold and wet.

Then I looked at myself. I wore an oil cloth coat and pants with waterproof boots—the best money could buy. I was pretty chintzy with my sons' clothing because they outgrow it so quickly. I realized that unless they were only going to be fair-weather hunters I needed to provide them with some better gear.

We didn't go rabbit hunting the next weekend. We went to the shoe store. I asked for the manager because I knew if I was going to buy high-end hunting boots in bulk, I could get a decent discount. An hour later, I left a check at the counter that would have made a nice monthly house payment. I knew that I would be back next year when those feet required bigger boots.

Next, we dealt with the issue of hunting pants. Rabbit hunting involves walking through some pretty thick and thorny brush. My sons usually wore two pairs of jeans with sweat pants underneath as protection from the thorns. Unfortunately, if it was hot or rainy these multiple layers could be miserable.

We tried all kinds of hunting pants with nylon protective fronts but none would fit. All three of my sons were football players and weight lifters. Their thighs were as thick as tree trunks. Obviously, they had inherited their bulk from their mother. The only option was to have brush chaps custom-made to fit over their gigantic legs.

Gloves were a problem because it was almost impossible to have a weekend hunting trip without one or all three boys losing at least one glove. I had dealt with this predicament by buying large quantities of cheap cloth gloves, but they were not suited for intense cold and did not repel water. I finally just bit the bullet and ordered a healthy supply of insulated gloves, hoping that they would lose left and right gloves on an alternating basis.

Hunting coats, especially coats that were

We didn't go rabbit hunting the next weekend. We went to the shoe store.





water resistant, were just as much of a quandary as pants because of the size of my sons' chests. Finding ones that fit and were hunter orange was impossible. We tried plastic blaze-orange vests, but these would tear off in minutes. Our solution was to purchase some nice oil cloth coats, hang them from a tree in the backyard and spray paint them orange. It seemed a shame to do this to nice new coats, but it worked.

Sharing a shotgun on a weekend hunt was a big downer for the boys, so my biggest expense in outfitting the three young hunters was guns, both shotguns and rifles.

I decided that all of my sons would need good shotguns, which was, of course, a pretty expensive decision. My wife, Jen, viewed this level of family expenditure, on top of the boots and everything else, with doubt and suspicion. But, I assured her it was for "her babies."

Actually, this was the best part of gearing up three young hunters. After all, what hunter doesn't like to go shopping for more guns?

The first gun for my oldest son was easy. I bought a \$5 raffle ticket at a fundraising banquet and won a nice 20-gauge double-barrel shotgun. Unfortunately, I was never able to duplicate this very cost-effective method of

acquiring shotguns, and I had to turn to the family checkbook for further purchases.

I was quail hunting with a friend on the J.N. Turkey Kern Conservation Area in Johnson County and having a wonderful time. My friend, on the other hand, couldn't hit the broad side of a barn all day. Late in the afternoon, the final covey erupted in front of my hunting buddy. He fired three times, missing each time. In frustration, he threw his gun down in the snow and yelled out, "This gun is for sale."

I was able to negotiate a very favorable purchase price, and my youngest son had his first gun. I was sure my son could work out all those misses with some practice.

I spent almost 20 years buying boots, hunting clothing, guns, ammo and hunting licenses for my sons. They are grown now and have moved away, but the outfitting continues. I bought my oldest son a nice, expensive pair of hunting boots last Christmas, and we usually send our sons a gift certificate to one of the major outdoor hunting equipment suppliers on their birthdays.

I don't know how much it has cost me over the years, but it was worth it. Hunting is still a tradition for us, and the memories of our hunting trips are priceless. ▲

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Hunting and Fishing Calendar

FISHING

	OPEN	CLOSE
Black Bass (certain Ozark streams, see the <i>Wildlife Code</i>)	5/26/07	2/29/08
impoundments and other streams year-round		
Bullfrog	Sunset 6/30/08	Midnight 10/31/08
Gigging nongame fish	9/15/07	1/31/08
Trout Parks Catch and Release	11/9/07	2/11/08
Friday–Monday at Bennett Spring, Montauk and Roaring River and daily at Maramec Springs		

HUNTING

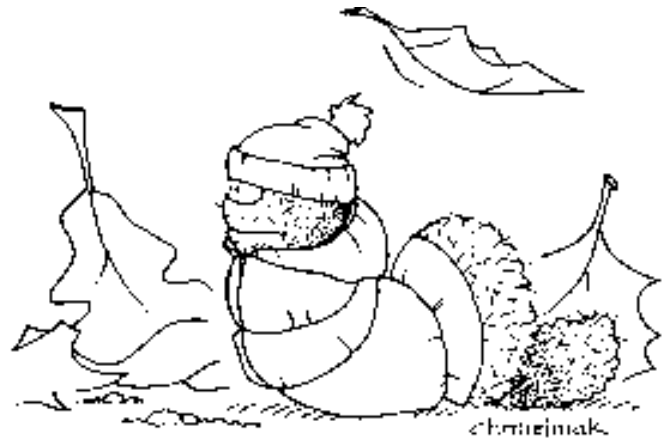
	OPEN	CLOSE
Common Snipe	9/1/07	12/16/07
Coyotes	5/7/07	3/31/08
Crow	11/1/07	3/3/08
Deer		
Archery	11/21/07	1/15/08
Firearms		
Muzzleloader	11/23/07	12/2/07
Antlerless	12/8/07	12/16/07
Furbearers	11/15/07	1/31/08
Groundhog	5/7/07	12/15/07
Pheasants		
North Zone	11/1/07	1/15/08
South Zone	12/1/07	12/12/07
Quail	11/1/07	1/15/08
Rabbits	10/1/07	2/15/08
Ruffed Grouse	10/15/07	1/15/08
Squirrels	5/26/07	2/15/08
Turkey		
Fall Archery	11/21/07	1/15/08
Waterfowl	please see the <i>Waterfowl Hunting Digest</i> or see www.missouriconservation.org/7573	

TRAPPING

	OPEN	CLOSE
Beaver and Nutria	11/15/07	3/31/08
Furbearers	11/15/07	1/31/08
Otters and Muskrats	11/15/07	see <i>Wildlife Code</i>

For complete information about seasons, limits, methods and restrictions, consult the *Wildlife Code* and the current summaries of *Missouri Hunting and Trapping Regulations* and *Missouri Fishing Regulations*, the *Fall Deer and Turkey Hunting Regulations and Information*, the *Waterfowl Hunting Digest* and the *Migratory Bird Hunting Digest*. For more information visit www.missouriconservation.org/8707 or permit vendors.

The Department of Conservation's computerized point-of-sale system allows you to purchase or replace your permits through local vendors or by phone. The toll-free number is 800-392-4115. Allow 10 days for delivery of telephone purchases. To purchase permits online go to www.wildlifelicense.com/mo/.



The harsh winter came as no surprise to anyone who'd seen woolly worm caterpillars in the fall.

Contributors



JEREMY KOLAKS lives in Jefferson City with his wife, Sandy, and is a senior research specialist working in a cooperative position between the Department and the University of Missouri. During work, and even free time, Jeremy wanders through the woods of Missouri pondering if conditions are right for a prescribed burn.

LYNN ROBBINS is a professor of biology at Missouri State University where he has been teaching courses and conducting research on wildlife for the past 22 years. He enjoys field research and educating students of all ages in the joys of outdoor biology.



CHRISTINE TEW was a Protection Division intern with the Northeast Region. She enjoys being outdoors with friends. Christine is a senior studying agricultural journalism and natural resources management at the University of Missouri-Columbia.

DAVID URICH is the Wildlife Division's Ozark unit chief and a 29-year employee with the Department. He lives on a 40-acre farm in Moniteau County where he and his wife, Jennifer, raised three sons. Rabbit hunting and fishing are among his many hobbies.



TIME CAPSULE

December 1977

Missouri's Not So Dull by Jon L.

Hawker explains why Missouri, a state of moderate size, has such an impressive array of species and natural wonders and the challenge this arrangement offers botanists, zoologists and ecologists. One

reason is that centrally located Missouri is considered an "ecotone," a zone of blending between two or more plant and animal communities. While states in the north, south, east and west have their own species, an ecotone, such as in Missouri, will have species common to each of these neighboring areas, and thus will have species that not all of those areas can have. In addition, the Missouri Ozarks are home to many unique species found nowhere else on earth.—*Contributed by the Circulation staff*



AGENT NOTES

Conservation agents enforce laws that protect caves.

Missouri, the "Cave State," has more than 5,700 recorded caves. That is more caves per square mile than any other state. Nearly 800 different species of animals, including some that are federally endangered, have been found in Missouri caves.

Most of these caves are on private land. To enter any cave on private land—even if it's along a river—you must have permission of the landowner. Otherwise, you are trespassing. Other offenses relating to caves are littering, graffiti, removal of mineral formations, artifact digging, vandalism and entering closed caves. Statutes protect both public and private caves in Missouri from these destructive activities. Enter caves only if you have proper safety equipment and training.

Many bat species hibernate in caves during the winter months or use them as nurseries for rearing young. Caves also provide refuge from cold, drought and predators for other wildlife. Many caves on Conservation Department areas require a permit to enter. The entrances to sensitive caves on conservation areas often have specially engineered gates that allow bats to enter and exit, but not humans. Landowners should not allow entrance to caves on their land if bats use them for hibernation or as nurseries.



Robin Brandenburg is the conservation agent for Crawford County, which is in the St. Louis region. If you would like to contact the agent for your county, phone your regional Conservation office listed on page 3.

behind the CODE

Waterfowl hunting regulations

BY TOM Cwynar

Making Missouri's waterfowl hunting regulations takes up a good portion of the year and involves a lot of people and energy. Because ducks and geese are migratory, state and federal agencies cooperate in creating waterfowl seasons and bag limits.

The country is divided into four flyways that correspond to the routes waterfowl regularly take to and from their breeding grounds. Missouri is in the Mississippi Flyway.



The Mississippi Flyway Council consists of representatives and biologists from 14 states and three Canadian provinces. The council provides input into a rules framework that applies to all states in the flyway.

Spring surveys to estimate waterfowl numbers and wetland conditions in Canada guide decisions about season length and bag limits. Every state in the flyway is allowed the same maximum number of days and maximum bag limits, but they may choose to impose smaller bag limits and allow fewer hunting days.

After learning the federal framework, Missouri biologists recommend season dates based on hunter preferences, habitat conditions, harvest information and weather patterns to the Conservation Commission.

Missouri waterfowl hunting regulations are not finalized until late August, too late to be included in the current year's *Wildlife Code*. Instead, they are included in the *Waterfowl Hunting Digest* booklet, available from permit sellers around Sept. 1.

“I AM THE NEXT GENERATION OF CONSERVATION”

Suzanne Wright participated in the Annual Christmas Bird Count near Columbia last December. Wright is president of the Boone’s Lick Chapter of the Missouri Master Naturalist program and belongs to the Columbia Audubon Society. She helped band birds with the MAPS (Monitoring Avian Productivity and Survivorship) program as part of her volunteer hours for Missouri Master Naturalist. “I’m seriously hooked on bird banding,” she said. To learn more about conservation activities, visit www.missouriconservation.org. —PHOTO BY JIM RATHERT



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